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AWMD/WRAP-KNRP

GENERAL DYNAMICS

Ordnance and Tactical Systems

Munition Services

September 27, 2012

Tim O'Brien
Hazardous Waste Program
Missouri Dept. of Natural Resources
P. O. Box 176
Jefferson City, MO 65102

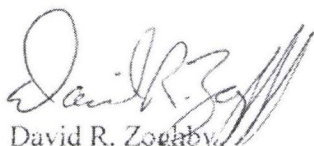
7282 Flint Hill Road
New Tripoli, PA 18066
Tel (610)-298-3085
Fax (610)-298-4652

Re: EBV Explosives Environmental Company Permit No. MOD985798164

Dear Tim,

EBV Explosives Environmental Company dba General Dynamics Ordnance and Tactical Systems Munition Services (GD-OTS MS) is submitting our response to MDNR's comments received by email and dated August 29, 2012 on the Building #3 Comprehensive Performance Test Report. The GD-OTS MS responses are in *italic* on the following pages. If you have any questions regarding this modification, please contact me at (610) 298-3085.

Very truly yours,



David R. Zogaby
Senior Director of Marketing
& Commercial Contracts

Attachments: Response to Comments
Spec Sheets
Spreadsheets

cc. Darleen Groner, MDNR HWP
Ken Herstowski, EPA Region 7

RCRA



524501

Please provide the following information:

- 1) Supporting information from the manufacturers for the operating parameter limits based on manufacturer's specifications.

Attached is a table supporting the basis for AWFCO setpoints based on manufacturer and engineering specifications. GD-OTS MS is also submitting updated Operating Data Summary Tables based on emission test averages.

- 2) Certification that equipment is installed according to manufacturer's requirements (and supporting information).

This certification of the installation of the upgraded APCS equipment and as-built drawings were done by Mike McKinnis of ESC Engineering and was submitted to MDNR on April 2, 2012.

- 3) The test plan required that no blowdown occur during testing and that steady state be established. During dioxin/furan testing blowdown from the scrubber averaged 5.24 gpm necessitating a minimum blowdown rate in the permit of 5.24 gpm.

The goal was to minimize the blowdown rates and maximize the NaCl% in the Packed Bed for the worst-case scenario. The initial runs had no blowdown with NaCl% around 13%. The Ds/Fs runs on 6/19 had NaCl% around 15% so blowdown was needed to be taken off. The wet scrubber OPL for particulate matter is either solids content in the scrubber liquid (NaCl%) or blowdown rate and scrubber liquid level. GD-OTS MS is using the Scrubber NaCl% as the OPL.

- 4) Operating data during testing is needed for scrubber liquid level, quench liquid level and powdered activated carbon feed rate.

Operating data for the packed bed liquid level, quench vessel liquid level and activated carbon fee rate are included in the attached tables. The data historian was not setup to record the activated carbon feed rate until 6/19 so there is no recorded data for 6/19, but Steve Jaques and I monitors the feed rate for the entire set of test runs.

- 5) Manufacturer's specifications are needed for dry sorbent carrier fluid flow and powdered activated carbon carrier fluid flow.

Ducon and GD-OTS MS designed the SBC systems and Tuthill Vacuum & Blower Systems specified the 5003-21L2 PneuPak Rotary blower. Fox Venturi Eductors designed the activated carbon system and specified a Rotron DR656/CP656 Regenerative Blower. The spec sheets, which show the design flow rates for these blowers, are included. Neither of these systems have a flowmeter on the air flow. As detailed in the approved Temporary Authorizations and submitted in the Class 3 Permit Mod requests, the SBC system has an AWFCO for the injection blower and for the

particulate sensor on each line to ensure the SBC is flowing to the Quench Chamber in use. The AC system has an AWFCO for the injection blower.

- 6) How is the waste feed rate data obtained, calculated and recorded?

The PLC records the input of each segment into the thermal treatment chamber. Each segment is recorded as 42 lbs with the sixth segment of the motor recorded as 43 lbs for a total of 337 lbs for each motor.

- 7) How is the powdered activated carbon feed rate data obtained, calculated and recorded?

The feed screw under the activated carbon silo was physically calibrated for the lbs/hr based on variable speed drive frequency. This calibration factor is used in the PLC to display the feed rate in lbs/hr and the same feed rate information is sent to the data historian to be recorded.

- 8) Information on the sodium bicarbonate supplier and specifications.

SOLVAir Select 300 from Solvay Chemicals as specified in the TA and Class 3 Mod. Specification sheet is attached.

- 9) Information on the powdered activated carbon supplier and specifications.

GC Powdered-FG" from General Carbon Corp as specified in the TA and Class 3 Mod. Specification sheet is attached.

- 10) Describe and document how steady state conditions were established prior to and during testing.

Per the approved CPT Plan "The PTTCs and APCS are at steady state conditions within 45 minutes from the time the first treated segment is fed to the PTTC."

| Test Date | Start Feeding | Start Sampling | Pre Sampling Time |
|------------|---------------|----------------|-------------------|
| 4/25 Run 1 | 7:31 | 8:33 | 62 minutes |
| 4/26 Run 4 | 7:01 | 8:15 | 74 minutes |
| 6/19 Run 1 | 8:03 | 9:49 | 106 minutes |

For subsequent runs on each day the feed was not stopped so the APCS remained at steady state.

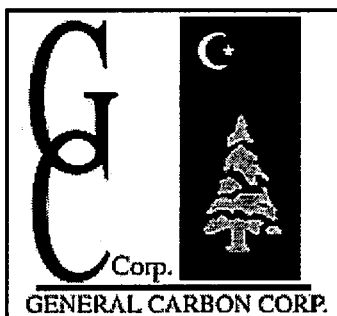
- 11) Testing did not include a demonstration of compliance with particulate standard with the additional feed of powdered activated carbon.

The PM standard was demonstrated for the system during the initial test runs where the $<15\mu$ SBC feed rate was 2,100 lbs/hr and very fine Al_2O_3 was generated from the propellant burning at 462 lbs/hr. The test showed a PM level at 40% of the permit limit. We did not test for PM during the test where an additional 18 lbs/hr of a 43μ activated carbon was added because engineering judgment indicated that the system still would met the PM standard even with this small quantity of additional activated carbon.

- 12) Mercury (Hg), LVM and SVM feed rate limits and compliance methodology.

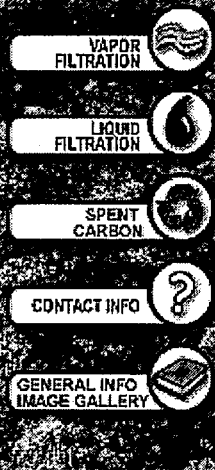
The only waste treated in this facility is the M26 MLRS Rocket Motor which has a known and fixed composition as shown in the US Army MIDAS information submitted with the application. Based on the US Army MIDAS information, there is no mercury in this waste, so compliance with the mercury feed rate limit is ensured. The results of the CPT have shown compliance with the emission levels for low volatile metals and semi volatile metals; thus the hazardous waste feed rate limit during the CPT tests ensures compliance with the LVM and SVM feed rate limits.

| Basis for AWFCO Setpoints based on Manufacturer and Engineering Specifications | | | | |
|--|----------|----------|--------------------|---|
| Parameter | Setpoint | Units | Basis | Manufacturers or Engineering Spec |
| Flame Sensor | Off | On/Off | All | Flame sensor detects that natural gas torch is lite before the segment is fed. Sensor is normally on and AWFCO trips if it turns off. |
| PTTC Pressure OMA - High | -0.20 | in. w.c. | Fugitive Emissions | Developed based on a review of operating data for both chambers. |
| SBC Feed Rate HRA - Low | 25 | Lbs/min | HCl | SBC is the initial and primary HCl neutralizing agent, but wet scrubber with NaOH is secondary and can handle all the HCl generated. Also have the HCl CEMS in the stack as an AWFCO to ensure compliance. |
| SBC Blower Operating | Off | On/Off | HCl | Blower motor must be running before the segment is moved into the chamber. Sensor is normally on and AWFCO trips if it turns off. |
| SBC Particulate Sensor | Off | On/Off | HCl | Particulate sensor detects if SBC particulates are going past the sensor when the segment is in position to be fed to the chamber. Sensor is normally on and AWFCO trips if it turns off. |
| AC Blower Operating | Off | On/Off | D/F | Blower motor must be running before the segment is moved into the chamber. Sensor is normally on and AWFCO trips if it turns off. |
| Baghouse Inlet Temperature - High | 400 | ° F | D/F | Dioxin & Furan reformation range is over 400 °F. AWFCO will trip if hits this instantaneous level. |
| Broken Bag Detectors | On | On/Off | PM | Particulate sensor detects if particulates are going past the sensor. Sensor is normally off and AWFCO trips if off. |
| Quench Vessel NaCl Level HRA - High | 12.0 | % NaCl | PM | Developed based on operating knowledge and data. Primary purpose of Quench Vessel is to cool gases to <165F. Packed Bed is the primary wet scrubber unit for removal HCl. Also have the HCl CEMS in the stack as an AWFCO to ensure compliance. |
| Quench Vessel pH HRA - Low | 6.0 | pH | HCl | Developed based on operating knowledge and data. Primary purpose of Quench Vessel is to cool gases to <165F. Packed Bed is the primary wet scrubber unit for removal HCl. Also have the HCl CEMS in the stack as an AWFCO to ensure compliance. |
| Quench Vessel DP - Low | 1.0 | in. w.c. | HCl | Based on manufacturers recommended level and operating data review. |
| Quench Vessel Recycle Water Flow Rate - Low | 100 | gpm | HCl | Flow rate is normally between 125 to 140 gpm. If flow goes under 100 gpm the AWFCO trips and stops the segments from entering chamber |
| Packed Bed DP - Low | 2.0 | in. w.c. | HCl | Based on manufacturers recommended level and operating data review. |
| Packed Bed Recycle Water Flow Rate - Low | 200 | gpm | HCl | Flow rate is normally between 225 to 240 gpm. If flow goes under 200 gpm the AWFCO trips and stops the segments from entering chamber |
| Stack Gas Flow Rate OMA - Low | 19,000 | acfm | Fugitive Emissions | Based on velocity testing at discharge conveyor on 4/26/2012. |
| Stack HCl Level HRA - High | 21 | ppm | Permit Limit | Permit Limit |



CLEANING
the WORLD
with
ACTIVATED
CARBON

LIQUID
FILTRATION



33 Paterson Street
Paterson, NJ 07501
Tel: 973 523-2223
Fax: 973 523-1494
sales@generalcarbon.com

GC POWDERED-FG

ACTIVATED CARBON FOR FLUE GAS TREATMENT

GC Powdered-FG Activated Carbon is a virgin carbon. Derived from selected grades of bituminous coal, its surface area and pore volume make it ideal for use in flue gas applications including the removal of mercury, dioxins, furans and other VOC compounds.

Specifications

| | |
|----------------------------------|-----------|
| Mesh size, (US Sieve): | |
| -100 mesh, %: | 99(min) |
| -200 mesh, %: | 95(min) |
| -325 mesh, %: | 90(min) |
| Ignition Temperature, deg. F: | 400(min) |
| Iodine Number, mg/g | 600(min) |
| Surface Area, m ² /g: | 600(min) |
| Moisture, % (as packaged): | 5(max) |
| Ash Content, %: | 15(max) |
| Typical Density, lbs./cu.ft.: | 32-36 |
| g/cc: | 0.52-0.57 |

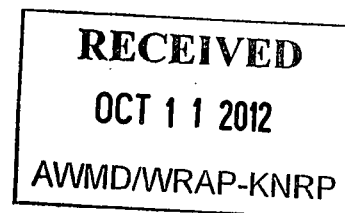
*Standard packaging is in 55lb (25kg) or 1100lb (500kg) bags. Other packaging is available upon request.

Caution!

Wet activated carbon removes oxygen from air causing a severe hazard to workers inside carbon vessels. Confined space/low oxygen procedures should be put in place before any entry is made. Such procedures should comply with all applicable local, state and federal guidelines.

33 Paterson Street • Paterson, NJ 07501 • Tel: 973 523-2223 Fax: 973 523-1494

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ROTRON® Regenerative Blowers

DR 656 & CP 656 Regenerative Blower

FEATURES

- Manufactured in the USA
- CE compliant – Declaration of Conformity on file
- Maximum flow: 210 SCFM
- Maximum pressure: 106 IWG
- Maximum vacuum: 6.39" Hg (87 IWG)
- Standard motor: 4.0 HP, TEFC
- Cast aluminum blower housing, impeller & cover;
- cast iron muffler extension & flanges (threaded)
- UL & CSA approved motor with permanently sealed ball bearings
- Inlet & outlet internal muffling
- Quiet operation within OSHA standards

MOTOR OPTIONS

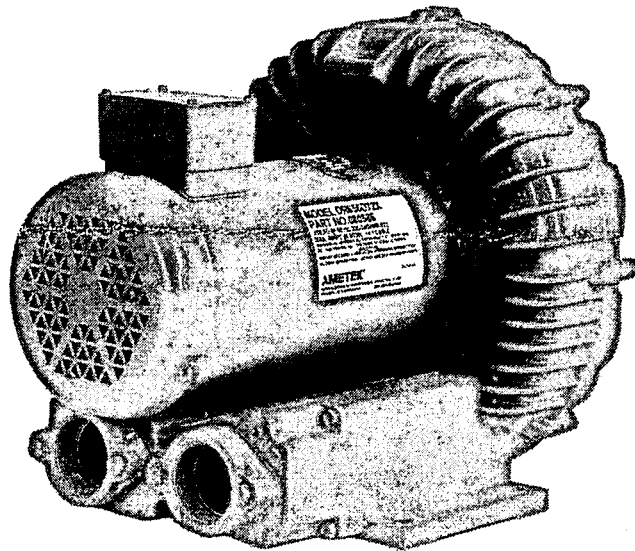
- International voltage & frequency (Hz)
- Chemical duty, high efficiency, inverter duty or industry-specific designs
- Various horsepower for application-specific needs

BLOWER OPTIONS

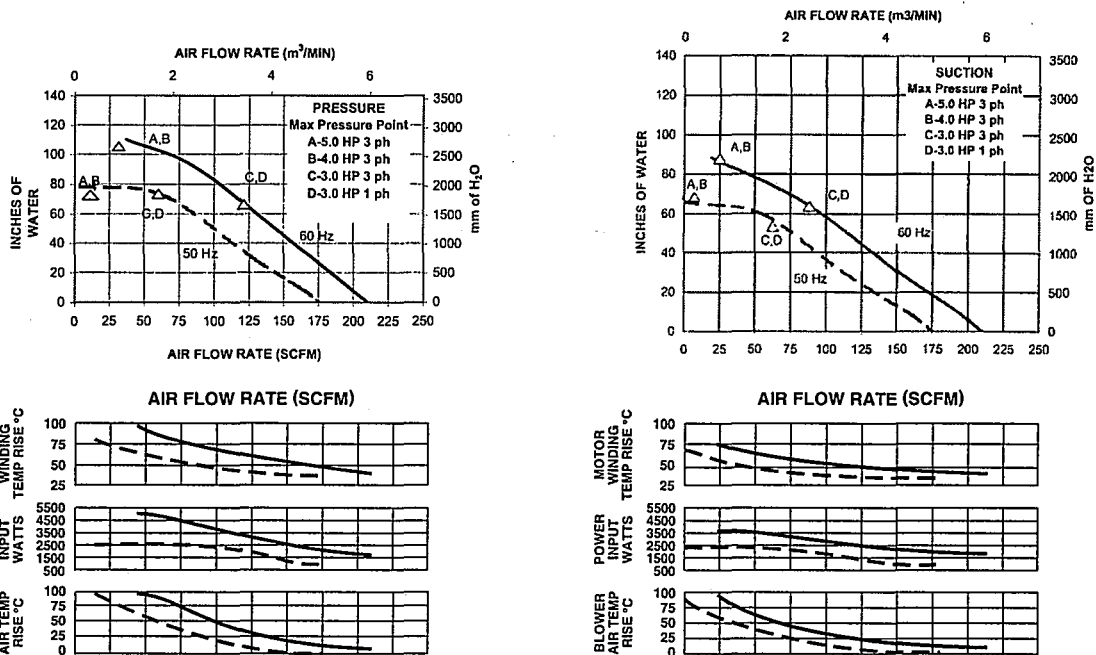
- Corrosion resistant surface treatments & sealing options
- Remote drive (motorless) models
- Slip-on or face flanges for application-specific needs
- Cast iron cover for additional noise resonance

ACCESSORIES (See Catalog Accessory Section)

- Flowmeters reading in SCFM
- Filters & moisture separators
- Pressure gauges, vacuum gauges & relief valves
- Switches – air flow, pressure, vacuum or temperature
- External mufflers for additional silencing
- Air knives (used on blow-off applications)



BLOWER PERFORMANCE AT STANDARD CONDITIONS



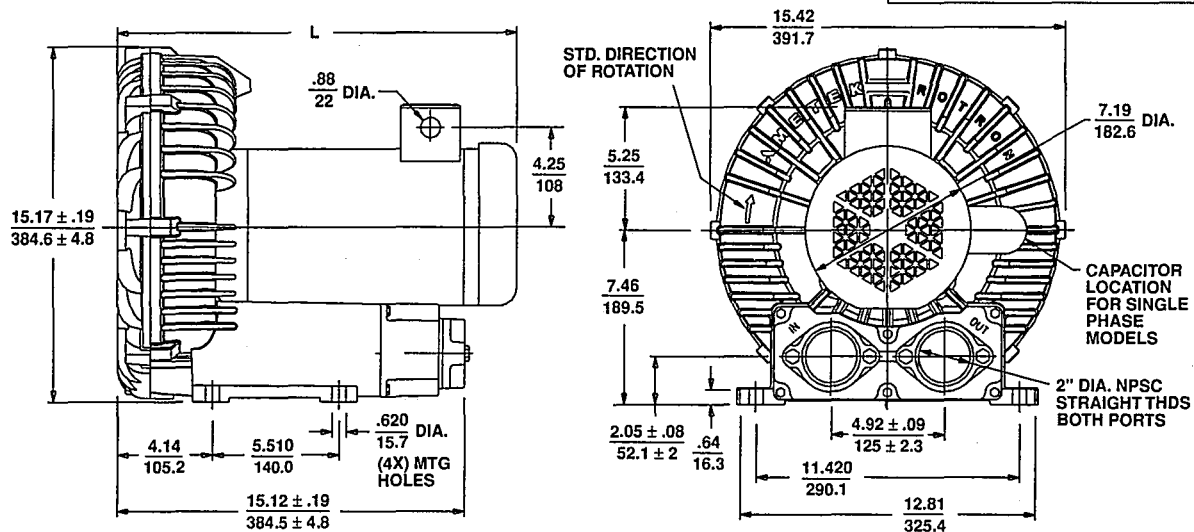
Rev. 2/04

B-23

AMETEK Technical and Industrial Products, Kent, OH 44240 • e mail: rotronindustrial@ametek.com • internet: www.ametekind.com

ROTRON[®] Regenerative Blowers**DR 656 & CP 656
Regenerative Blower**

Scale CAD drawing available upon request.



DIMENSIONS: IN
MM
TOLERANCES: .XX ± .08
2
(UNLESS OTHERWISE NOTED)

| MODEL | L (IN) | L (MM) |
|---------------|--------|--------|
| DR656D72/86X | 17.77 | 451.3 |
| DR656CK72/86X | 17.39 | 441.7 |
| DR656K58X | 17.39 | 441.7 |

SPECIFICATIONS

| MODEL | DR656CK72X | DR656CK86X | DR656K72X | DR656K58X | DR656D72X | DR656D86X | CP656CR72XLR |
|-------------------------------------|-------------|---------------------|---------------------|---------------------|---------------------|---------------------|--|
| Part No. | 080582 | 080583 | 080602 | 080603 | 080585 | 080604 | 080065 |
| Motor Enclosure - Shaft Material | TEFC - CS | TEFC - CS | TEFC - CS | TEFC - CS | TEFC - CS | TEFC - CS | ChemTEFC - SS |
| Horsepower | 4 | 4 | 3 | 3 | 5 | 5 | 4 |
| Voltage ¹ | 230/460 | 575 | 230/460 | 115/230 | 230/460 | 575 | Same as DR656CK72X 080582 except add Chemical Processing (CP) features from catalog inside front cover |
| Phase - Frequency ¹ | Three-60 Hz | Three-50/60 Hz | Three-60 Hz | Single-60 Hz | Three-60 Hz | Three-60 Hz | |
| Insulation Class ² | F | F | F | F | F | F | |
| NEMA Rated Motor Amps | 10/5 | 4 | 7.4/3.7 | 31/15.5 | 12.8/6.4 | 4.8 | |
| Service Factor | 1.15 | 1.0 | 1.15 | 1.0 | 1.0 | 1.15 | |
| Locked Rotor Amps | 94/47 | 80 | 54/27 | 200/100 | 160/80 | 60 | |
| Max. Blower Amps ³ | 11.4/5.7 | 4.56 | 8.8/4.4 | 27.8/13.9 | 13/6.5 | 5.2 | |
| Recommended NEMA Starter Size | 1/0 | 0 | 0/0 | 1.5/1 | 1/1 | 1 | |
| Shipping Weight | lb kg | 110 lb (49.9 kg) | 110 lb (49.9 kg) | 114 lb (51.8 kg) | 112 lb (50.8 kg) | 112 lb (50.8 kg) | 114 lb (51.8 kg) |

¹ Rotron motors are designed to handle a broad range of world voltages and power supply variations. Our dual voltage 3 phase motors are factory tested and certified to operate on both: 208-230/415-460 VAC-3 ph-60 Hz and 200-220/380-415 VAC-3 ph-50 Hz. Our dual voltage 1 phase motors are factory tested and certified to operate on both: 104-115/208-230 VAC-1 ph-60 Hz and 100-110/200-220 VAC-1 ph-50 Hz. All voltages above can handle a $\pm 10\%$ voltage fluctuation. Special wound motors can be ordered for voltages outside our certified range.

² Maximum operating temperature: Motor winding temperature (winding rise plus ambient) should not exceed 140°C for Class F rated motors or 120°C for Class B rated motors. Blower outlet air temperature should not exceed 140°C (air temperature rise plus inlet temperature). Performance curve maximum pressure and suction points are based on a 40°C inlet and ambient temperature. Consult factory for inlet or ambient temperatures above 40°C.

³ Maximum blower amps corresponds to the performance point at which the motor or blower temperature rise with a 40°C inlet and/or ambient temperature reaches the maximum operating temperature.

Specifications subject to change without notice. Please consult your Local Field Sales Engineer for specification updates.

Rev. 2/04

AMETEK Technical and Industrial Products, Kent, OH 44240 • e mail: rotronindustrial@ametek.com • internet: www.ametekrmd.com

B-24

SOLVAir® Select 300

SOLVAir® Select 300 (Sodium Bicarbonate)

Technical Data Sheet

| | |
|------------------|--------------------------|
| Formula | NaHCO ₃ |
| Molecular Weight | 84.01 |
| Appearance | White Crystalline Powder |

| | Typical | Specification Minimum | Maximum |
|-------------------------------|---------|--------------------------|---------|
| NaHCO ₃ , % | 99 | 97 | |
| H ₂ O Insoluble, % | 0.4 | | 1.0 |

| Mesh Screen Sizes | Typical | Range |
|-------------------|---------|----------|
| US >=100 (150 µm) | 62 | 41 - 100 |
| US >=200 (75 µm) | 81 | 69 - 105 |
| US >=325 (45 µm) | 89 | 80 - 104 |

| Mesh Screen Sizes | Typical | Range |
|--------------------------------------|---------|-----------|
| Bulk Density, lbs/cf | 80 | 75 - 85 |
| Median Diameter D50 (µm) (by volume) | 195 | 131 - 323 |
| Median Diameter D90 (µm) (by volume) | 425 | 334 - 567 |

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Before using, read the Material Safety Data Sheet (MSDS) for the chemical.



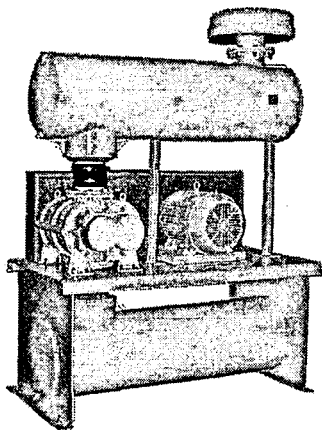
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www.solvaychemicals.us/solvair
1.800.443.2785

Solvay
Chemicals



a Passion for Progress®





PneuPak™

Compact Rotary Blower Packages

Based on the dependable **COMPETITOR® PLUS™** rotary positive blowers, **PneuPak** rotary blower packages are a dependable and economical low pressure (up to 15 PSIG or 16" Hg vacuum) air source for many industrial and municipal applications such as pneumatic conveying of bulk powder or seed, fluidization/agitation of bulk powders, wastewater aeration, milking of dairy cattle and motive force for vacuum exhausting and cleaning systems.

In addition to dependability and economy, **PneuPak** rotary blower packages offer many distinct advantages:

Quick Availability

PneuPak rotary blower packages are available from factory in as little as one week after receipt of your order.

Maintenance Friendly

Designed for easy access to vital areas for maintenance, **PneuPak** provides easy access to grease fittings and the oil reservoir.

Factory Built and Factory Warranted

PneuPak compact rotary blower packages are built in the Tuthill Vacuum & Blower Systems manufacturing facility under our ISO 9001 registered quality assurance system to assure you that your **PneuPak** is of the highest quality.

All **PneuPak** rotary blower packages are covered by a factory warranty of 18 months after installation, not to exceed 24 months after shipment.

Mounting Base with Integral Silencer

PneuPak utilizes an integrated silencer/base to provide a wide variety of blower-motor combinations.

Multiple Configurations

Whatever your air handling needs, there is a **PneuPak** available for your application. Automated configuration optimizes your **PneuPak** to afford you the best value for your investment.

Your Local Tuthill Vacuum & Blower Systems Sales Professional:

QUALITY FEATURES

PneuPak™ rotary blower packages include the following quality features:

- M-D Pneumatics™ **COMPETITOR PLUS** rotary positive blower that includes features normally found only on premium design blowers such as:
 - Helical timing gears for quiet operation
 - Double row ball bearings on gear end of all models increases overall design bearing life by up to 50% versus other makes
 - Rotors with integrally cast shafts that allow larger shaft diameters and greater strength as compared to the competition
 - All shaft surfaces in contact with sealing members are highly polished to reduce seal wear and risk of leakage
 - **EVERY COMPETITOR PLUS** blower is factory tested to assure of the highest quality. While other manufacturers only perform sample testing, Tuthill Vacuum & Blower Systems goes the distance to make sure that your blower meets our rigid ISO 9001 registered quality standards.
- EPACT compliant, energy efficient electric motor
- Welded steel motor slide base
- Matched V-belt drive with 1.4 service factor
- OSHA belt guard with flow-through ventilation keeps belts running cool
- Integral mounting base with discharge silencer
- Low pressure drop inlet filter
- Easy and convenient maintenance
- Suitable for indoor or outdoor installation
- Shipped completely assembled for convenient installation*
 - * Height consideration may require partial disassembly for shipment

Accessory Kits

Available for your **PneuPak**, accessory kits provide you the ability to customize your **PneuPak** for your particular needs. Available accessory kits include:

- Pressure or vacuum relief valve kit with fittings required for installation
- Instrumentation kit including inlet filter restriction indicator and 0-15 PSIG discharge pressure gauge
- NEMA 4/12 control panel for wall mounting including:
 - Powder coated and gasketed steel enclosure
 - Circuit breaker disconnect with through-the-door operator
 - Control circuit transformer with fused windings
 - Magnetic motor starter with overloads and manual reset
 - Run light
 - On-Off-Auto selector switch

LEADING THE SEARCH FOR NEW SOLUTIONS



TUTHILL
Vacuum & Blower Systems



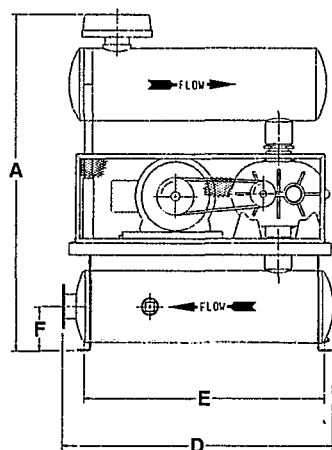
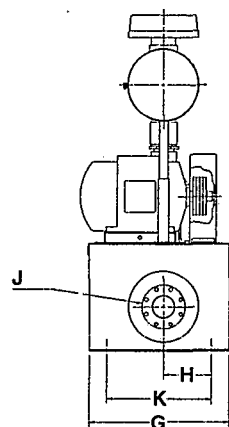
4840 West Kearney Street, P. O. Box 2877
Springfield, Missouri USA 65801-2877
Tel 417 865-8715 800 825-6937 Fax 417 865-2950

<http://pneumatics.tuthill.com>

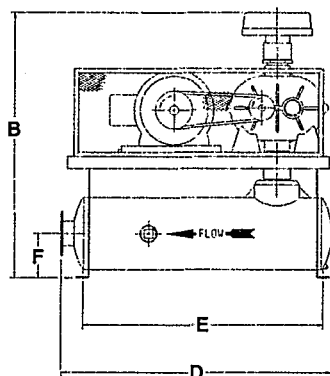
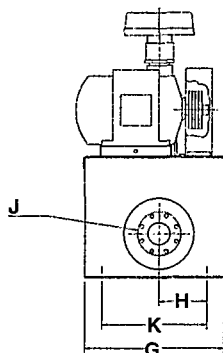
Dimensions

Dimensions shown below are approximate and should not be used for construction. Certified drawings are available through your local Tuthill Vacuum & Blower Systems sales professional.

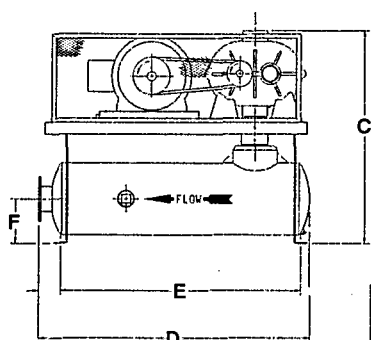
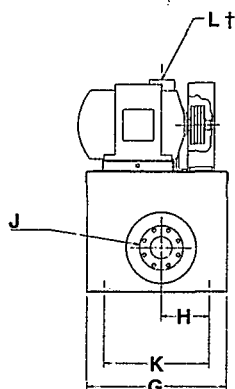
For performance information, refer to COMPETITOR® PLUS™ specification sheet, or consult BlowerXpert™ automated blower sizing and selection software package.



PneuPak "A" Package with inlet filter/silencer, inlet silencer and discharge silencer



PneuPak "B" Package with inlet filter/silencer and discharge silencer



PneuPak "C" Package with discharge silencer

Dimensional Table

All dimensions are shown in inches.

| PneuPak Size | A* | B* | C* | D | E | F | G | H | J | K |
|--------------|--------|-------|-------|-------|-------|----|-------|-------|---------|-------|
| 13-20 | 45.13 | 35 | 24.75 | | | | | | | |
| 23-20 | 47.13 | — | — | 30 | 25 | 5 | 19 | 4.50 | 2" NPT | 12 |
| 33-20 | 49.13 | 37 | 26.75 | | | | | | | |
| 13-25 | 49.44 | 37.63 | 27.75 | | | | | | | |
| 23-25 | 51.44 | — | — | 31 | 25.50 | 6 | 26 | 6 | 2½" NPT | 18 |
| 33-25 | 53.44 | 39.63 | 29.75 | | | | | | | |
| 13-30 | 55.69 | 43.94 | 32.19 | | | | | | | |
| 23-30 | 59.69 | — | — | 49.50 | 44 | 7 | 27 | 7.50 | 3" NPT | 18 |
| 33-30 | 61.38 | 48.19 | 36.19 | | | | | | | |
| 13-40 | 71.13 | 52.94 | 41.94 | | | | | | | |
| 23-40 | 74.13 | — | — | 50.38 | 44 | 8 | 30.50 | 8.56 | 4" NPT | 20.50 |
| 33-40 | 75.75 | 55.94 | 44.94 | | | | | | | |
| 13-50 | 75.69 | 56.69 | 44.94 | | | | | | | |
| 23-50 | 78.69 | — | — | 62 | 55 | 10 | 32 | 11 | 5" FLG | 24 |
| 33-50 | 81.19 | 59.69 | 47.94 | | | | | | | |
| 13-60 | 84.44 | 57.94 | 48 | | | | | | | |
| 23-60 | 88.44 | — | — | 69 | 62 | 12 | 33 | 12.50 | 6" FLG | 24 |
| 33-60 | 91.44 | 60.94 | 51 | | | | | | | |
| 13-80 | 101.50 | 69 | 51.88 | | | | | | | |
| 23-80 | 114.25 | — | — | 89 | 65.75 | 15 | 42 | 12 | 8" FLG | 24 |
| 33-80 | 116.25 | 81.75 | 64.63 | | | | | | | |

* "A", "B" and "C" height dimensions shown are "not to exceed" values. Actual height may be lower, depending on blower model incorporated in your package. Certified prints are available from your local Tuthill Vacuum & Blower Systems Sales Professional.

† "L" dimension is blower inlet connection size. Please refer to COMPETITOR PLUS specification sheet for applicable blower inlet connection size.

PneuPak Sizes Available for Each Blower

Blowers that can be mounted in each PneuPak are shown to the right of the applicable PneuPak.

| PneuPak Size | Blower Model | PneuPak Size | Blower Model | PneuPak Size | Blower Model | PneuPak Size | Blower Model |
|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|
| 13-20 | 2002 | 13-30 | 3006 | 13-50 | 5009 | 13-80 | |
| 23-20 | 2004 | 23-30 | 4005 | 23-50 | 6005 | 23-80 | 7011 |
| 33-20 | 3003 | 33-30 | 4007 | 33-50 | 6008 | 33-80 | 7018 |
| | 3006 | | 5003 | | 7006 | | |
| | 4002 | | 6005 | | | | |
| 13-25 | 3003 | 13-40 | 4007 | 13-60 | 6008 | | |
| 23-25 | 3006 | 23-40 | 5006 | 23-60 | 6015 | | |
| 33-25 | 4002 | 33-40 | 5009 | 33-60 | 7006 | | |
| | 4005 | | 6005 | | 7011 | | |
| | 5003 | | 7006 | | | | |

LEADING THE SEARCH FOR NEW SOLUTIONS



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Building #3 CPT Summary of Operating Data

| | Test Average | | | HCl Test Average | | | Run 1 - 4/25/2012 | | | Run 2 - 4/25/2012 | | | Run 3 - 4/26/2012 | | |
|---------------------------------------|--------------|--------|--------|------------------|--------|--------|-------------------|--------|--------|-------------------|--------|--------|-------------------|--------|--------|
| | Average | Min | Max | Average | Min | Max | Average | Min | Max | Average | Min | Max | Average | Min | Max |
| PTTC East Exit Temp °F TT-120 | 467 | 265 | 619 | 291 | 184 | 389 | 284 | 207 | 348 | Not Operating | | | 297 | 161 | 430 |
| PTTC West Exit Temp °F TT-122 | 370 | 153 | 617 | 231 | 87 | 427 | Not Operating | | | 231 | 87 | 427 | Not Operating | | |
| PTTC East Pressure PT-118 °H2O | -0.63 | -1.00 | -0.14 | -0.70 | -1.05 | -0.20 | -0.68 | -1.08 | -0.22 | Not Operating | | | -0.72 | -1.02 | -0.18 |
| PTTC West Pressure PT-119 °H2O | -0.44 | -0.77 | -0.02 | -0.56 | -0.98 | -0.04 | Not Operating | | | -0.56 | -0.98 | -0.04 | Not Operating | | |
| PTTC East Pressure °H2O OMA | -0.64 | -0.76 | -0.54 | -0.72 | -0.85 | -0.64 | -0.68 | -0.84 | -0.60 | Not Operating | | | -0.75 | -0.86 | -0.68 |
| PTTC West Pressure °H2O OMA | -0.44 | -0.58 | -0.36 | -0.54 | -0.78 | -0.43 | Not Operating | | | -0.54 | -0.78 | -0.43 | Not Operating | | |
| Quench Chamber Water Flow Rate gpm | 0.6 | 0.0 | 4.5 | 1.5 | 0.0 | 7.0 | 2.1 | 0.0 | 11.0 | 0.0 | 0.0 | 0.0 | 2.4 | 0.0 | 10.0 |
| Sorbent Feed Rate lbs/min | 35 | 35 | 35 | 32 | 32 | 32 | 32.0 | 32.0 | 32.0 | 32.0 | 32.0 | 32.0 | 32.0 | 32.0 | 32.0 |
| Sorbent Feed Rate lbs/min HRA | 35 | 35 | 35 | 32 | 32 | 32 | 32.0 | 32.0 | 32.9 | 32.0 | 32.0 | 32.0 | 32.0 | 32.0 | 32.0 |
| Baghouse Inlet Temp °F TT-124 | 276 | 204 | 350 | 239 | 182 | 304 | 243 | 183 | 309 | 228 | 158 | 295 | 247 | 205 | 310 |
| Baghouse Inlet Temp °F HRA TT-124 | 272 | 252 | 287 | 238 | 222 | 248 | 241 | 226 | 249 | 225 | 200 | 242 | 248 | 240 | 254 |
| BH #1 DP °H2O | 3.3 | 2.8 | 4.0 | 3.2 | 2.8 | 3.8 | 3.3 | 2.8 | 4.0 | 3.2 | 2.7 | 3.9 | 3.2 | 2.9 | 3.6 |
| BH #2 DP °H2O | 3.4 | 2.9 | 4.0 | 3.3 | 2.9 | 3.9 | 3.3 | 2.8 | 3.8 | 3.3 | 2.9 | 3.9 | 3.3 | 2.9 | 3.9 |
| BH #3 DP °H2O | 3.2 | 2.3 | 3.8 | 3.1 | 2.0 | 3.7 | 3.1 | 2.0 | 3.7 | 3.1 | 1.8 | 3.8 | 3.1 | 2.1 | 3.6 |
| BH #4 DP °H2O | 3.3 | 2.3 | 3.9 | 3.2 | 1.6 | 3.8 | 3.2 | 2.3 | 4.1 | 3.1 | 0.1 | 3.8 | 3.1 | 2.5 | 3.5 |
| BH #5 DP °H2O | 3.3 | 2.5 | 4.0 | 3.1 | 2.4 | 3.8 | 3.2 | 2.3 | 3.8 | 3.1 | 2.3 | 3.9 | 3.1 | 2.4 | 3.7 |
| BH #6 DP °H2O | 2.0 | 1.5 | 2.7 | 2.3 | 1.5 | 2.7 | 0.0 | 0.0 | 0.0 | 3.4 | 1.2 | 4.1 | 3.4 | 3.1 | 3.9 |
| Baghouse Total DP °H2O | 3.3 | 2.8 | 3.7 | 3.2 | 2.7 | 3.5 | 3.2 | 2.7 | 3.6 | 3.2 | 2.6 | 3.5 | 3.2 | 2.8 | 3.5 |
| Packed Bed Recycle Water Flow gpm | 232 | 229 | 235 | 230 | 227 | 233 | 229 | 226 | 231 | 229 | 226 | 234 | 232 | 229 | 234 |
| Packed Bed Recycle Water Flow gpm HRA | 232 | 231 | 234 | 230 | 229 | 231 | 229 | 228 | 231 | 229 | 229 | 230 | 232 | 231 | 232 |
| Packed Bed pH | 8.6 | 8.5 | 8.7 | 8.2 | 7.9 | 8.4 | 8.0 | 7.9 | 8.2 | 8.2 | 7.9 | 8.6 | 8.2 | 8.0 | 8.4 |
| Packed Bed pH HRA | 8.6 | 8.5 | 8.6 | 8.1 | 8.0 | 8.3 | 8.0 | 8.0 | 8.1 | 8.2 | 8.0 | 8.4 | 8.2 | 8.1 | 8.3 |
| Packed Bed NaCl % | 13.5 | 12.9 | 14.3 | 14.3 | 13.6 | 15.1 | 14.9 | 14.0 | 15.7 | 14.8 | 14.2 | 15.3 | 13.3 | 12.7 | 14.3 |
| Packed Bed NaCl % HRA | 13.7 | 13.2 | 14.3 | 14.5 | 14.0 | 15.0 | 14.7 | 14.3 | 15.3 | 14.9 | 14.7 | 15.3 | 13.7 | 13.0 | 14.3 |
| Packed Bed DP °H2O | 2.7 | 2.1 | 3.0 | 2.9 | 2.3 | 3.2 | 2.7 | 2.2 | 3.0 | 2.9 | 2.2 | 3.3 | 3.0 | 2.5 | 3.3 |
| Packed Bed DP °H2O HRA | 2.7 | 2.6 | 2.8 | 2.8 | 2.7 | 2.9 | 2.7 | 2.5 | 2.8 | 2.8 | 2.7 | 3.1 | 3.0 | 2.9 | 3.0 |
| Quench Fresh Water Flow gpm | 1.5 | 0.0 | 4.6 | 0.9 | 0.0 | 3.4 | 1.5 | 0.0 | 3.5 | 0.9 | 0.0 | 3.4 | 0.3 | 0.0 | 3.3 |
| Quench Recycle Water Flow gpm | 136 | 135 | 137 | 145 | 144 | 146 | 145 | 144 | 146 | 145 | 144 | 146 | 145 | 143 | 146 |
| Quench Recycle Water Flow gpm HRA | 136 | 136 | 137 | 145 | 145 | 145 | 145 | 145 | 145 | 145 | 145 | 145 | 145 | 145 | 145 |
| Quench Vessel NaCl % | 5.4 | 4.5 | 6.2 | 6.2 | 5.1 | 7.7 | 5.9 | 5.2 | 6.8 | 6.2 | 5.2 | 8.3 | 6.5 | 4.9 | 8.0 |
| Quench Vessel NaCl % HRA | 5.7 | 5.2 | 6.2 | 6.1 | 5.8 | 6.7 | 5.8 | 5.5 | 6.3 | 6.2 | 5.8 | 7.0 | 6.2 | 5.9 | 6.8 |
| Quench Vessel pH | 8.3 | 7.4 | 8.6 | 7.6 | 6.3 | 8.2 | 7.6 | 6.1 | 8.2 | 7.6 | 6.7 | 8.2 | 7.6 | 6.1 | 8.3 |
| Quench Vessel pH HRA | 8.3 | 8.1 | 8.4 | 7.6 | 7.5 | 7.8 | 7.6 | 7.5 | 7.9 | 7.6 | 7.5 | 7.9 | 7.6 | 7.4 | 7.7 |
| Quench Vessel DP °H2O | 3.2 | 2.7 | 3.4 | 2.9 | 2.5 | 3.2 | 2.7 | 2.3 | 3.0 | 2.9 | 2.3 | 3.2 | 3.2 | 2.8 | 3.4 |
| Quench Vessel DP °H2O HRA | 2.2 | 1.9 | 3.7 | 2.9 | 2.7 | 3.0 | 2.7 | 2.5 | 2.8 | 2.8 | 2.7 | 3.1 | 3.1 | 3.0 | 3.2 |
| Blow Down Water Flow gpm | 1.7 | 1.2 | 2.4 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| HCl Level ppm | 5.7 | 3.7 | 8.5 | 4.4 | 2.2 | 9.8 | 0.4 | -0.1 | 2.8 | 4.3 | 0.0 | 15.7 | 8.6 | 6.6 | 11.0 |
| HCl Level ppm HRA | 5.4 | 4.4 | 6.6 | 3.9 | 2.8 | 5.7 | 0.0 | 0.0 | 0.0 | 3.1 | 0.0 | 8.2 | 8.7 | 8.5 | 8.8 |
| CO Level ppm | 15.0 | 0.0 | 126.0 | 17.3 | 0.0 | 208.6 | 7.9 | 0.0 | 34.0 | 36.1 | 0.0 | 553.9 | 7.8 | 0.0 | 38.0 |
| Stack Moisture Level % | 7.2 | 5.8 | 8.1 | 6.8 | 4.2 | 8.3 | 7.2 | 6.0 | 8.4 | 5.7 | 0.0 | 8.5 | 7.3 | 6.7 | 8.1 |
| Stack Flow acfm | 24,665 | 23,205 | 26,158 | 25,101 | 23,464 | 26,825 | 24,920 | 23,118 | 26,990 | 25,160 | 23,366 | 26,941 | 25,222 | 23,907 | 26,543 |
| Stack Flow acfm OMA | 24,658 | 23,841 | 25,242 | 25,092 | 24,224 | 25,761 | 24,894 | 24,002 | 25,369 | 25,185 | 24,020 | 26,272 | 25,197 | 24,651 | 25,643 |
| Stack Flow acfm HRA | 24,590 | 24,241 | 24,819 | 25,039 | 24,699 | 25,292 | 24,894 | 24,354 | 25,041 | 25,086 | 24,750 | 25,558 | 25,138 | 24,993 | 25,276 |
| Stack Flow dscfm | 20,239 | 19,008 | 21,670 | 20,693 | 19,197 | 22,542 | 20,448 | 19,079 | 22,363 | 20,997 | 19,110 | 23,581 | 20,635 | 19,401 | 21,682 |
| Stack Temp °F | 137 | 132 | 141 | 137 | 133 | 142 | 137 | 132 | 142 | 137 | 132 | 143 | 138 | 136 | 141 |
| Stack Pressure °H2O | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| HCl Emission lb/min | 0.013 | 0.008 | 0.027 | 0.011 | 0.005 | 0.042 | 0.001 | 0.000 | 0.007 | 0.012 | 0.000 | 0.093 | 0.021 | 0.015 | 0.027 |
| HCl Emission lb/hr | 0.81 | 0.46 | 1.65 | 0.67 | 0.30 | 2.52 | 0.06 | -0.01 | 0.42 | 0.71 | 0.00 | 5.56 | 1.23 | 0.91 | 1.59 |

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Building #3 CPT Summary of Operating Data

| | PM & Metals Test Average | | | Run 4 - 4/26/2013 | | | Run 5 - 4/26/2014 | | | Run 6 - 4/26/2015 | | |
|---------------------------------------|--------------------------|--------|--------|-------------------|--------|--------|-------------------|--------|--------|-------------------|--------|--------|
| | Average | Min | Max | Average | Min | Max | Average | Min | Max | Average | Min | Max |
| PTTC East Exit Temp "F TT-120 | 510 | 300 | 670 | Not Operating | | | 498 | 289 | 644 | 522 | 311 | 697 |
| PTTC West Exit Temp "F TT-122 | 343 | 152 | 619 | 343 | 152 | 619 | Not Operating | | | Not Operating | | |
| PTTC East Pressure PT-118 "H2O | -0.67 | -0.99 | -0.20 | Not Operating | | | -0.69 | -0.99 | -0.18 | -0.65 | -1.00 | -0.21 |
| PTTC West Pressure PT-119 "H2O | -0.51 | -0.82 | -0.09 | -0.51 | -0.82 | -0.09 | Not Operating | | | Not Operating | | |
| PTTC East Pressure "H2O OMA | -0.66 | -0.79 | -0.57 | Not Operating | | | -0.69 | -0.85 | -0.59 | -0.64 | -0.72 | -0.55 |
| PTTC West Pressure "H2O OMA | -0.51 | -0.60 | -0.42 | -0.51 | -0.60 | -0.42 | Not Operating | | | Not Operating | | |
| Quench Chamber Water Flow Rate gpm | 0.4 | 0.0 | 6.6 | 0.0 | 0.0 | 0.0 | 0.3 | 0.0 | 9.7 | 0.8 | 0.0 | 10.0 |
| Sorbent Feed Rate lbs/min | 36 | 35 | 36 | 35.0 | 32.0 | 36.5 | 36.5 | 36.5 | 36.5 | 36.5 | 36.5 | 36.5 |
| Sorbent Feed Rate lb/min HRA | 36 | 35 | 36 | 34.1 | 32.0 | 36.5 | 36.5 | 36.5 | 36.5 | 36.5 | 36.5 | 36.5 |
| Baghouse Inlet Temp "F TT-124 | 284 | 205 | 367 | 261 | 165 | 355 | 291 | 212 | 377 | 299 | 240 | 368 |
| Baghouse Inlet Temp "F HRA TT-124 | 274 | 251 | 295 | 252 | 235 | 281 | 282 | 255 | 300 | 290 | 264 | 305 |
| BH #1 DP "H2O | 3.4 | 2.8 | 4.0 | 3.3 | 2.8 | 3.8 | 3.5 | 2.9 | 4.2 | 3.5 | 2.9 | 4.0 |
| BH #2 DP "H2O | 3.4 | 2.9 | 4.1 | 3.3 | 2.7 | 3.9 | 3.5 | 3.1 | 4.1 | 3.5 | 2.9 | 4.3 |
| BH #3 DP "H2O | 3.3 | 2.3 | 3.9 | 3.1 | 2.1 | 3.8 | 3.4 | 2.4 | 3.9 | 3.3 | 2.4 | 4.1 |
| BH #4 DP "H2O | 3.4 | 2.7 | 4.1 | 3.2 | 2.5 | 3.8 | 3.5 | 2.8 | 4.1 | 3.4 | 2.8 | 4.3 |
| BH #5 DP "H2O | 3.3 | 2.5 | 4.2 | 3.1 | 2.2 | 4.1 | 3.4 | 2.8 | 4.5 | 3.4 | 2.5 | 3.8 |
| BH #6 DP "H2O | 0.0 | 0.0 | 1.2 | 0.1 | 0.0 | 3.7 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Baghouse Total DP "H2O | 3.4 | 2.8 | 3.8 | 3.2 | 2.7 | 3.7 | 3.5 | 2.9 | 3.9 | 3.4 | 2.9 | 3.9 |
| Packed Bed Recycle Water Flow gpm | 233 | 230 | 235 | 231 | 229 | 234 | 234 | 231 | 236 | 233 | 230 | 235 |
| Packed Bed Recycle Water Flow gpm HRA | 233 | 232 | 234 | 231 | 231 | 233 | 234 | 233 | 234 | 233 | 233 | 234 |
| Packed Bed pH | 8.5 | 8.4 | 8.6 | 8.3 | 8.2 | 8.5 | 8.5 | 8.4 | 8.6 | 8.6 | 8.6 | 8.7 |
| Packed Bed pH HRA | 8.5 | 8.5 | 8.5 | 8.3 | 8.3 | 8.4 | 8.5 | 8.5 | 8.6 | 8.6 | 8.6 | 8.6 |
| Packed Bed NaCl % | 11.3 | 10.6 | 12.1 | 13.3 | 11.9 | 14.6 | 10.7 | 10.2 | 11.4 | 10.0 | 9.7 | 10.2 |
| Packed Bed NaCl % HRA | 11.6 | 10.9 | 12.0 | 13.7 | 12.5 | 14.3 | 10.9 | 10.4 | 11.5 | 10.1 | 9.9 | 10.2 |
| Packed Bed DP "H2O | 2.6 | 2.1 | 3.0 | 2.6 | 2.1 | 3.1 | 2.6 | 2.0 | 2.8 | 2.7 | 2.1 | 3.1 |
| Packed Bed DP "H2O HRA | 2.6 | 2.5 | 2.8 | 2.7 | 2.6 | 3.0 | 2.6 | 2.5 | 2.8 | 2.6 | 2.6 | 2.8 |
| Quench Fresh Water Flow gpm | 0.4 | 0.0 | 3.3 | 0.2 | 0.0 | 3.3 | 0.3 | 0.0 | 3.2 | 0.6 | 0.0 | 3.2 |
| Quench Recycle Water Flow gpm | 145 | 144 | 146 | 144 | 143 | 146 | 145 | 144 | 146 | 145 | 143 | 146 |
| Quench Recycle Water Flow gpm HRA | 145 | 145 | 145 | 144 | 144 | 145 | 145 | 145 | 145 | 145 | 145 | 145 |
| Quench Vessel NaCl % | 7.6 | 6.3 | 8.5 | 7.0 | 5.7 | 7.9 | 7.0 | 6.2 | 7.8 | 8.8 | 7.0 | 9.9 |
| Quench Vessel NaCl % HRA | 7.4 | 6.9 | 7.9 | 6.8 | 6.6 | 7.2 | 7.1 | 6.9 | 7.3 | 8.4 | 7.3 | 9.4 |
| Quench Vessel pH | 7.7 | 6.7 | 8.1 | 7.4 | 4.8 | 8.2 | 7.6 | 7.4 | 8.0 | 7.9 | 7.8 | 8.1 |
| Quench Vessel pH HRA | 7.6 | 7.5 | 7.8 | 7.4 | 7.0 | 7.6 | 7.6 | 7.5 | 7.8 | 8.0 | 7.9 | 8.1 |
| Quench Vessel DP "H2O | 3.0 | 2.4 | 3.3 | 3.0 | 2.5 | 3.3 | 3.1 | 2.5 | 3.4 | 3.0 | 2.3 | 3.4 |
| Quench Vessel DP "H2O HRA | 3.0 | 2.9 | 3.2 | 3.1 | 2.8 | 3.2 | 3.0 | 2.9 | 3.2 | 3.1 | 2.9 | 3.2 |
| Blow Down Water Flow gpm | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| HCL Level ppm | 7.3 | 4.2 | 9.8 | 8.3 | 4.3 | 11.2 | 5.2 | 3.6 | 7.1 | 8.5 | 4.6 | 11.2 |
| HCL Level ppm HRA | 7.0 | 5.4 | 8.3 | 7.9 | 6.3 | 9.3 | 5.1 | 4.8 | 5.7 | 7.8 | 5.1 | 10.0 |
| CO Level ppm | 9.9 | 0.0 | 51.3 | 9.6 | 0.0 | 43.9 | 9.5 | 0.0 | 60.1 | 10.7 | 0.0 | 49.8 |
| Stack Moisture Level % | 7.1 | 6.1 | 7.8 | 7.1 | 5.7 | 7.7 | 6.8 | 6.1 | 7.8 | 7.3 | 6.7 | 7.7 |
| Stack Flow acfm | 25,694 | 24,376 | 26,989 | 25,420 | 23,856 | 27,084 | 25,818 | 24,699 | 26,943 | 25,844 | 24,572 | 26,941 |
| Stack Flow acfm OMA | 25,677 | 25,018 | 26,284 | 25,419 | 24,675 | 26,061 | 25,782 | 25,174 | 26,181 | 25,831 | 25,203 | 26,612 |
| Stack Flow acfm HRA | 25,614 | 25,397 | 25,787 | 25,335 | 25,119 | 25,540 | 25,742 | 25,472 | 25,888 | 25,766 | 25,601 | 25,933 |
| Stack Flow dscfm | 21,121 | 20,036 | 22,358 | 20,844 | 19,417 | 22,396 | 21,299 | 20,423 | 22,460 | 21,219 | 20,267 | 22,219 |
| Stack Temp "F | 137 | 131 | 139 | 138 | 132 | 141 | 136 | 134 | 139 | 136 | 127 | 138 |
| Stack Pressure "H2O | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| HCl Emission lb/min | 0.018 | 0.010 | 0.024 | 0.020 | 0.011 | 0.027 | 0.013 | 0.009 | 0.018 | 0.021 | 0.012 | 0.028 |
| HCl Emission lb/hr | 1.07 | 0.62 | 1.45 | 1.20 | 0.64 | 1.61 | 0.76 | 0.51 | 1.06 | 1.25 | 0.70 | 1.68 |

Building #3 CPT Summary of Operating Data

| | Ds/Fs Test Average | | | Run 1 - 6/19/2012 | | | Run 2 - 6/19/2013 | | | Run 3 - 6/19/2014 | | |
|---------------------------------------|--------------------|--------|--------|-------------------|--------|--------|-------------------|--------|--------|-------------------|--------|--------|
| | Average | Min | Max | Average | Min | Max | Average | Min | Max | Average | Min | Max |
| PTTC East Exit Temp "F TT-120 | 602 | 311 | 796 | Not Operating | | | 584 | 303 | 795 | 619 | 319 | 798 |
| PTTC West Exit Temp "F TT-122 | 537 | 218 | 806 | 537 | 218 | 806 | Not Operating | | | Not Operating | | |
| PTTC East Pressure PT-118 "H2O | -0.53 | -0.96 | -0.03 | Not Operating | | | -0.53 | -0.95 | -0.05 | -0.53 | -0.98 | -0.003 |
| PTTC West Pressure PT-119 "H2O | -0.27 | -0.52 | 0.08 | -0.27 | -0.52 | 0.078 | Not Operating | | | Not Operating | | |
| PTTC East Pressure "H2O OMA | -0.53 | -0.64 | -0.41 | Not Operating | | | -0.54 | -0.67 | -0.39 | -0.52 | -0.61 | -0.42 |
| PTTC West Pressure "H2O OMA | -0.27 | -0.37 | -0.22 | -0.27 | -0.37 | -0.22 | Not Operating | | | Not Operating | | |
| Quench Chamber Water Flow Rate gpm | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Sorbent Feed Rate lbs/min | 38 | 38 | 38 | 37.6 | 37.6 | 37.6 | 37.6 | 37.6 | 37.6 | 37.6 | 37.6 | 37.6 |
| Sorbent Feed Rate lb/min HRA | 38 | 38 | 38 | 37.6 | 37.6 | 37.6 | 37.6 | 37.6 | 37.6 | 37.6 | 37.6 | 37.6 |
| Baghouse Inlet Temp "F TT-124 | 306 | 225 | 379 | 303 | 208 | 383 | 296 | 222 | 365 | 320 | 244 | 389 |
| Baghouse Inlet Temp "F HRA TT-124 | 304 | 284 | 317 | 302 | 274 | 320 | 289 | 266 | 304 | 320 | 311 | 328 |
| BH #1 DP "H2O | 3.4 | 2.6 | 4.1 | 3.4 | 2.6 | 4.0 | 3.3 | 2.6 | 4.3 | 3.4 | 2.6 | 3.9 |
| BH #2 DP "H2O | 3.4 | 2.9 | 4.0 | 3.4 | 2.8 | 4.1 | 3.4 | 2.9 | 3.9 | 3.4 | 2.8 | 3.9 |
| BH #3 DP "H2O | 3.3 | 2.7 | 3.8 | 3.4 | 2.7 | 3.8 | 3.3 | 2.7 | 3.8 | 3.3 | 2.7 | 3.8 |
| BH #4 DP "H2O | 3.4 | 2.7 | 3.9 | 3.4 | 2.6 | 4.1 | 3.4 | 2.7 | 3.9 | 3.4 | 2.7 | 3.8 |
| BH #5 DP "H2O | 3.4 | 2.7 | 3.9 | 3.4 | 2.7 | 4.1 | 3.4 | 2.6 | 3.8 | 3.4 | 2.7 | 3.9 |
| BH #6 DP "H2O | 3.6 | 3.2 | 4.1 | 3.6 | 3.2 | 4.2 | 3.6 | 3.1 | 4.0 | 3.6 | 3.2 | 4.2 |
| Baghouse Total DP "H2O | 3.4 | 2.9 | 3.7 | 3.4 | 2.9 | 3.8 | 3.4 | 3.0 | 3.7 | 3.4 | 2.9 | 3.7 |
| Packed Bed Recycle Water Flow gpm | 235 | 231 | 238 | 235 | 229 | 239 | 235 | 233 | 239 | 234 | 231 | 237 |
| Packed Bed Recycle Water Flow gpm HRA | 234 | 233 | 236 | 234 | 230 | 237 | 235 | 235 | 236 | 234 | 234 | 234 |
| Packed Bed pH | 9.1 | 9.0 | 9.1 | 9.1 | 9.0 | 9.2 | 9.0 | 9.0 | 9.1 | 9.1 | 9.1 | 9.1 |
| Packed Bed pH HRA | 9.1 | 9.0 | 9.1 | 9.1 | 9.0 | 9.1 | 9.1 | 9.0 | 9.1 | 9.1 | 9.1 | 9.1 |
| Packed Bed NaCl % | 14.9 | 14.5 | 15.9 | 15.2 | 14.5 | 17.4 | 14.9 | 14.5 | 15.1 | 14.8 | 14.4 | 15.1 |
| Packed Bed NaCl % HRA | 15.1 | 14.8 | 15.9 | 15.6 | 14.8 | 17.8 | 14.8 | 14.8 | 14.9 | 14.8 | 14.8 | 14.9 |
| Packed Bed DP "H2O | 2.6 | 2.0 | 2.9 | 2.4 | 2.0 | 2.9 | 2.6 | 2.0 | 3.0 | 2.6 | 2.1 | 3.0 |
| Packed Bed DP "H2O HRA | 2.5 | 2.4 | 2.6 | 2.4 | 2.4 | 2.5 | 2.6 | 2.4 | 2.7 | 2.6 | 2.6 | 2.6 |
| Quench Fresh Water Flow gpm | 3.1 | 0.0 | 7.0 | 2.7 | 0.0 | 6.8 | 2.9 | 0.0 | 6.8 | 3.5 | 0.0 | 7.5 |
| Quench Recycle Water Flow gpm | 119 | 118 | 120 | 119 | 118 | 120 | 119 | 118 | 120 | 119 | 118 | 121 |
| Quench Recycle Water Flow gpm HRA | 119 | 119 | 119 | 119 | 119 | 119 | 119 | 119 | 119 | 119 | 119 | 119 |
| Quench Vessel NaCl % | 2.3 | 2.2 | 2.4 | 2.5 | 2.4 | 2.6 | 2.3 | 2.3 | 2.4 | 2.1 | 2.0 | 2.3 |
| Quench Vessel NaCl % HRA | 3.5 | 2.9 | 4.0 | 3.3 | 2.7 | 3.8 | 3.7 | 2.8 | 4.1 | 3.7 | 3.1 | 4.1 |
| Quench Vessel pH | 9.5 | 9.3 | 9.6 | 9.6 | 9.5 | 9.7 | 9.4 | 9.0 | 9.6 | 9.6 | 9.5 | 9.6 |
| Quench Vessel pH HRA | 9.5 | 9.5 | 9.6 | 9.6 | 9.5 | 9.6 | 9.5 | 9.3 | 9.6 | 9.6 | 9.6 | 9.6 |
| Quench Vessel DP "H2O | 3.5 | 3.4 | 3.6 | 3.3 | 3.2 | 3.3 | 3.6 | 3.3 | 3.7 | 3.7 | 3.6 | 3.8 |
| Quench Vessel DP "H2O HRA | 0.7 | 0.0 | 4.9 | 1.8 | 0.0 | 7.0 | 0.3 | 0.0 | 3.9 | 0.1 | 0.0 | 3.9 |
| Blow Down Water Flow gpm | 5.2 | 3.5 | 7.2 | 5.1 | 3.5 | 6.7 | 5.8 | 3.7 | 9.0 | 4.6 | 3.4 | 6.0 |
| HCL Level ppm | 5.2 | 4.7 | 5.8 | 5.2 | 4.8 | 5.6 | 5.9 | 4.9 | 6.9 | 4.7 | 4.5 | 5.0 |
| HCL Level ppm HRA | 5.3 | 4.9 | 5.9 | 5.3 | 4.9 | 6.0 | 5.9 | 5.1 | 6.6 | 4.7 | 4.6 | 5.0 |
| CO Level ppm | 17.7 | 0.0 | 118.0 | 20.5 | 0.0 | 145.5 | 17.1 | 0.0 | 141.0 | 15.4 | 0.0 | 67.6 |
| Stack Moisture Level % | 7.7 | 6.9 | 8.2 | 7.5 | 6.6 | 8.1 | 7.4 | 6.5 | 8.1 | 8.0 | 7.4 | 8.4 |
| Stack Flow acfm | 23,199 | 21,775 | 24,660 | 22,242 | 20,845 | 23,850 | 23,495 | 21,772 | 25,009 | 23,860 | 22,708 | 25,121 |
| Stack Flow acfm OMA | 23,204 | 22,280 | 23,679 | 22,266 | 21,582 | 22,735 | 23,509 | 21,971 | 24,092 | 23,837 | 23,286 | 24,211 |
| Stack Flow acfm HRA | 23,116 | 22,627 | 23,380 | 22,250 | 22,057 | 22,448 | 23,279 | 22,213 | 23,624 | 23,819 | 23,611 | 24,068 |
| Stack Flow dscfm | 18,904 | 17,791 | 20,111 | 18,221 | 17,109 | 19,470 | 19,199 | 17,921 | 20,477 | 19,293 | 18,343 | 20,384 |
| Stack Temp "F | 138 | 131 | 141 | 136 | 128 | 139 | 138 | 133 | 142 | 141 | 134 | 143 |
| Stack Pressure "H2O | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| HCl Emission lb/min | 0.011 | 0.008 | 0.016 | 0.011 | 0.008 | 0.015 | 0.013 | 0.008 | 0.020 | 0.010 | 0.007 | 0.014 |
| HCl Emission lb/hr | 0.68 | 0.46 | 0.97 | 0.65 | 0.45 | 0.91 | 0.77 | 0.48 | 1.19 | 0.63 | 0.45 | 0.82 |

| Sample | | | | Sample | | | | Sample | | | | AC Sorbent | | | |
|-----------|---------|-----------------|------------|--------|---------|-----------------|------------|--------|-----------|-----------------|------------|------------|-----------|-----------|---------------|
| Sample | 4/25/12 | Quench Vessel | Packed bed | Run | 4/26/12 | Quench Vessel | Packed bed | Run | 6/19/2012 | Quench Vessel | Packed bed | Run | 6/20/2012 | Feed Rate | AC Sorbent |
| Run Times | Time | Level Indicator | LVL | Times | Time | Level Indicator | LVL | Times | Time | Level Indicator | LVL | Times | Time | lb/hr | Feed Rate HRA |
| Run 1 | Average | 29.3 | 29.4 | Run 3 | Average | 30.0 | 29.5 | Run 1 | Average | 29.5 | 29.6 | Run 1 | Average | 25.0 | 25.0 |
| | Min | 28.6 | 28.9 | | Min | 29.0 | 28.9 | | Min | 28.9 | 29.0 | | Min | 25.0 | 25.0 |
| | Max | 30.1 | 30.0 | | Max | 30.8 | 30.0 | | Max | 30.0 | 30.1 | | Max | 25.0 | 25.0 |
| Run 2 | Average | 29.4 | 29.4 | Run 4 | Average | 30.5 | 29.2 | Run 2 | Average | 29.5 | 29.6 | Run 2 | Average | 24.9 | 24.9 |
| | Min | 28.4 | 28.9 | | Min | 29.0 | 28.9 | | Min | 28.9 | 28.9 | | Min | 0.0 | 24.6 |
| | Max | 30.0 | 30.0 | | Max | 31.4 | 29.5 | | Max | 30.0 | 30.1 | | Max | 25.0 | 25.0 |
| | | | | Run 5 | Average | 29.1 | 29.2 | Run 3 | Average | 29.5 | 29.6 | Run 3 | Average | 24.2 | 24.2 |
| | | | | | Min | 28.0 | 28.9 | | Min | 28.9 | 29.0 | | Min | 0.0 | 23.3 |
| | | | | | Max | 29.8 | 29.4 | | Max | 29.9 | 30.1 | | Max | 25.0 | 25.0 |
| | | | | Run 6 | Average | 26.7 | 29.1 | | | | | | | | |
| | | | | | Min | 25.6 | 28.9 | | | | | | 8:48 | 25.0 | |
| | | | | | Max | 27.9 | 29.4 | | | | | | 8:49 | 25.0 | |
| | | | | | | | | | | | | | 8:50 | 25.0 | |
| | 7:00 | 29.28 | 29.91 | | 7:00 | 30.73 | 29.73 | | 8:00 | 29.19 | 30.45 | | 8:51 | 25.0 | |
| | 7:01 | 29.19 | 29.82 | | 7:01 | 30.73 | 29.64 | | 8:01 | 29.10 | 30.45 | | 8:52 | 25.0 | |
| | 7:02 | 29.28 | 29.73 | | 7:02 | 30.73 | 29.55 | | 8:02 | 29.10 | 30.45 | | 8:53 | 25.0 | |
| | 7:03 | 29.28 | 29.73 | | 7:03 | 30.91 | 29.46 | | 8:03 | 29.10 | 30.36 | | 8:54 | 25.0 | |
| | 7:04 | 29.28 | 29.64 | | 7:04 | 30.91 | 29.46 | | 8:04 | 29.10 | 30.36 | | 8:55 | 25.0 | |
| | 7:05 | 29.19 | 29.55 | | 7:05 | 31.00 | 29.37 | | 8:05 | 29.37 | 30.36 | | 8:56 | 25.0 | |
| | 7:06 | 29.28 | 29.46 | | 7:06 | 31.18 | 29.37 | | 8:06 | 29.46 | 30.27 | | 8:57 | 25.0 | |
| | 7:07 | 29.28 | 29.28 | | 7:07 | 31.18 | 29.28 | | 8:07 | 29.55 | 30.36 | | 8:58 | 25.0 | |
| | 7:08 | 29.28 | 29.28 | | 7:08 | 31.27 | 29.28 | | 8:08 | 29.73 | 30.36 | | 8:59 | 25.0 | |
| | 7:09 | 29.28 | 29.10 | | 7:09 | 31.18 | 29.19 | | 8:09 | 29.82 | 30.36 | | 9:00 | 25.0 | |
| | 7:10 | 29.19 | 29.01 | | 7:10 | 31.27 | 29.10 | | 8:10 | 30.00 | 30.27 | | 9:01 | 25.0 | |
| | 7:11 | 29.10 | 29.01 | | 7:11 | 31.36 | 28.92 | | 8:11 | 29.91 | 30.27 | | 9:02 | 25.0 | |
| | 7:12 | 29.19 | 29.01 | | 7:12 | 31.27 | 29.10 | | 8:12 | 29.82 | 30.27 | | 9:03 | 25.0 | |
| | 7:13 | 29.10 | 29.10 | | 7:13 | 31.09 | 29.19 | | 8:13 | 29.73 | 30.18 | | 9:04 | 25.0 | |
| | 7:14 | 29.19 | 29.01 | | 7:14 | 31.09 | 29.37 | | 8:14 | 29.64 | 30.18 | | 9:05 | 25.0 | |
| | 7:15 | 29.10 | 29.10 | | 7:15 | 30.82 | 29.55 | | 8:15 | 29.55 | 30.18 | | 9:06 | 25.0 | |
| | 7:16 | 29.28 | 29.01 | | 7:16 | 30.91 | 29.64 | | 8:16 | 29.55 | 30.18 | | 9:07 | 25.0 | |
| | 7:17 | 29.28 | 29.01 | | 7:17 | 31.00 | 29.73 | | 8:17 | 29.37 | 30.18 | | 9:08 | 25.0 | |
| | 7:18 | 29.28 | 29.10 | | 7:18 | 30.91 | 30.00 | | 8:18 | 29.37 | 30.09 | | 9:09 | 25.0 | |
| | 7:19 | 29.37 | 29.01 | | 7:19 | 31.00 | 29.91 | | 8:19 | 29.28 | 30.09 | | 9:10 | 25.0 | |
| | 7:20 | 29.46 | 29.01 | | 7:20 | 31.00 | 29.91 | | 8:20 | 29.19 | 30.09 | | 9:11 | 25.0 | |
| | 7:21 | 29.46 | 29.10 | | 7:21 | 31.09 | 29.82 | | 8:21 | 29.10 | 30.00 | | 9:12 | 25.0 | |
| | 7:22 | 29.55 | 29.10 | | 7:22 | 31.18 | 29.82 | | 8:22 | 29.01 | 30.00 | | 9:13 | 25.0 | |
| | 7:23 | 29.64 | 29.01 | | 7:23 | 31.18 | 29.73 | | 8:23 | 29.19 | 30.00 | | 9:14 | 25.0 | |
| | 7:24 | 29.55 | 28.92 | | 7:24 | 31.18 | 29.64 | | 8:24 | 29.28 | 30.00 | | 9:15 | 25.0 | |
| | 7:25 | 29.46 | 29.01 | | 7:25 | 31.27 | 29.55 | | 8:25 | 29.46 | 29.91 | | 9:16 | 25.0 | |
| | 7:26 | 29.37 | 29.10 | | 7:26 | 31.27 | 29.46 | | 8:26 | 29.46 | 29.91 | | 9:17 | 25.0 | |
| | 7:27 | 29.37 | 29.19 | | 7:27 | 31.27 | 29.37 | | 8:27 | 29.73 | 29.91 | | 9:18 | 25.0 | |
| | 7:28 | 29.19 | 29.28 | | 7:28 | 31.45 | 29.28 | | 8:28 | 29.82 | 29.91 | | 9:19 | 25.0 | |
| | 7:29 | 29.10 | 29.46 | | 7:29 | 31.54 | 29.19 | | 8:29 | 29.91 | 29.91 | | 9:20 | 25.0 | |
| | 7:30 | 29.01 | 29.55 | | 7:30 | 31.54 | 29.10 | | 8:30 | 29.82 | 29.82 | | 9:21 | 25.0 | |
| | 7:31 | 29.10 | 29.73 | | 7:31 | 31.45 | 28.92 | | 8:31 | 29.82 | 29.82 | | 9:22 | 25.0 | |
| | 7:32 | 29.01 | 29.91 | | 7:32 | 31.36 | 29.10 | | 8:32 | 29.73 | 29.73 | | 9:23 | 25.0 | |
| | 7:33 | 28.92 | 30.00 | | 7:33 | 31.36 | 29.19 | | 8:33 | 29.64 | 29.82 | | 9:24 | 25.0 | |
| | 7:34 | 29.01 | 29.82 | | 7:34 | 31.09 | 29.28 | | 8:34 | 29.55 | 29.82 | | 9:25 | 25.0 | |
| | 7:35 | 29.19 | 29.64 | | 7:35 | 31.09 | 29.46 | | 8:35 | 29.46 | 29.73 | | 9:26 | 25.0 | |
| | 7:36 | 29.28 | 29.55 | | 7:36 | 31.09 | 29.55 | | 8:36 | 29.37 | 29.73 | | 9:27 | 25.0 | |
| | 7:37 | 29.46 | 29.55 | | 7:37 | 31.00 | 29.64 | | 8:37 | 29.28 | 29.73 | | 9:28 | 25.0 | |
| | 7:38 | 29.55 | 29.46 | | 7:38 | 30.91 | 29.82 | | 8:38 | 29.19 | 29.64 | | 9:29 | 25.0 | |
| | 7:39 | 29.64 | 29.46 | | 7:39 | 30.91 | 29.91 | | 8:39 | 29.10 | 29.64 | | 9:30 | 25.0 | |
| | 7:40 | 29.82 | 29.37 | | 7:40 | 30.91 | 29.91 | | 8:40 | 29.01 | 29.64 | | 9:31 | 25.0 | |
| | 7:41 | 29.91 | 29.28 | | 7:41 | 30.91 | 29.82 | | 8:41 | 29.10 | 29.64 | | 9:32 | 25.0 | |
| | 7:42 | 30.00 | 29.19 | | 7:42 | 30.91 | 29.82 | | 8:42 | 29.19 | 29.64 | | 9:33 | 25.0 | |
| | 7:43 | 29.91 | 29.01 | | 7:43 | 31.00 | 29.64 | | 8:43 | 29.37 | 29.64 | | 9:34 | 25.0 | |
| | 7:44 | 29.73 | 29.01 | | 7:44 | 30.91 | 29.55 | | 8:44 | 29.46 | 29.64 | | 9:35 | 25.0 | |
| | 7:45 | 29.82 | 29.01 | | 7:45 | 31.00 | 29.46 | | 8:45 | 29.64 | 29.55 | | 9:36 | 25.0 | |
| | 7:46 | 29.73 | 29.19 | | 7:46 | 31.09 | 29.28 | | 8:46 | 29.73 | 29.55 | | 9:37 | 25.0 | |
| | 7:47 | 29.55 | 29.37 | | 7:47 | 31.09 | 29.19 | | 8:47 | 29.82 | 29.46 | | 9:38 | 25.0 | |
| | 7:48 | 29.46 | 29.55 | | 7:48 | 31.18 | 29.19 | | 8:48 | 29.91 | 29.46 | | 9:39 | 25.0 | |
| | 7:49 | 29.46 | 29.73 | | 7:49 | 31.09 | 29.10 | | 8:49 | 29.82 | 29.46 | | 9:40 | 25.0 | |
| | 7:50 | 29.46 | 30.00 | | 7:50 | 31.18 | 29.01 | | 8:50 | 29.73 | 29.46 | | 9:41 | 25.0 | |
| | 7:51 | 29.55 | 30.00 | | 7:51 | 31.09 | 28.92 | | 8:51 | 29.64 | 29.46 | | 9:42 | 25.0 | |
| | 7:52 | 29.64 | 29.91 | | 7:52 | 31.09 | 29.01 | | 8:52 | 29.46 | 29.46 | | 9:43 | 25.0 | |
| | 7:53 | 29.64 | 29.91 | | 7:53 | 30.91 | 29.19 | | 8:53 | 29.55 | 29.37 | | 9:44 | 25.0 | |
| | 7:54 | 29.73 | 29.82 | | 7:54 | 30.82 | 29.19 | | 8:54 | 29.37 | 29.37 | | 9:45 | 25.0 | |
| | 7:55 | 29.82 | 29.82 | | 7:55 | 30.73 | 29.28 | | 8:55 | 29.37 | 29.37 | | 9:46 | 25.0 | |
| | 7:56 | 29.82 | 29.64 | | 7:56 | 30.64 | 29.46 | | 8:56 | 29.19 | 29.28 | | 9:47 | 25.0 | |
| | 7:57 | 29.82 | 29.55 | | 7:57 | 30.54 | 29.55 | | 8:57 | 29.10 | 29.28 | | 9:48 | 25.0 | 25.0 |
| | 7:58 | 29.91 | 29.46 | | 7:58 | 30.54 | 29.64 | | 8:58 | 29.10 | 29.28 | | 9:49 | 25.0 | 25.0 |
| | 7:59 | 29.91 | 29.37 | | 7:59 | 30.27 | 29.82 | | 8:59 | 29.10 | 29.19 | | 9:50 | 25.0 | 25.0 |
| 8:00 | 29.82 | 29.28 | 29.28 | 8:00 | 30.45 | 29.91 | 29.91 | 9:00 | 29.19 | 29.19 | 29.19 | 9:51 | 25.0 | 25.0 | |
| 8:01 | 29.91 | 29.19 | 29.19 | 8:01 | 30.36 | 29.82 | 29.82 | 9:01 | 29.37 | 29.19 | 29.19 | 9:52 | 25.0 | 25.0 | |
| 8:02 | 29.91 | 29.10 | 29.10 | 8:02 | 30.36 | 29.64 | 29.64 | 9:02 | 29.55 | 29.19 | 29.19 | 9:53 | 25.0 | 25.0 | |
| 8:03 | 29.91 | 28.92 | 28.92 | 8:03 | 30.36 | 29.55 | 29.55 | 9:03 | 29.64 | 29.19 | 29.19 | 9:54 | 25.0 | 25.0 | |
| 8:04 | 29.91 | 29.01 | 29.01 | 8:04 | 30.54 | 29.55 | 29.55 | 9:04 | 29.73 | 29.55 | 29.55 | 9:55 | 25.0 | 25.0 | |
| 8:05 | 29.64 | 29.10 | 29.10 | 8:05 | 30.54 | 29.37 | 29.37 | 9:05 | 29.64 | 30.09 | 30.09 | 9:56 | 25.0 | 25.0 | |
| 8:06 | 29.64 | 29.10 | 29.10 | 8:06 | 30.36 | 29.37 | 29.37 | 9:06 | 29.91 | 30.09 | 30.09 | 9:57 | 25.0 | 25.0 | |
| 8:07 | 29.46 | 29.28 | 29.28 | 8:07 | 30.45 | 29.28 | 29.28 | 9:07 | 30.00 | 30.00 | 30.00 | 9:58 | 25.0 | 25.0 | |
| 8:08 | 29.46 | 29.28 | 29.28 | 8:08 | 30.54 | 29.19 | 29.19 | 9:08 | 29.91 | 30.00 | 30.00 | 9:59 | 25.0 | 25.0 | |
| 8:09 | 29.28 | 29.37 | 29.37 | 8:09 | 30.64 | 29.10 | 29.10 | 9:09 | 29.82 | 30.00 | 30.00 | 10:00 | 25.0 | 25.0 | |
| 8:10 | 29.19 | 29.55 | 29.55 | 8:10 | 30.64 | 29.01 | 29.01 | 9:10 | 29.64 | 30.00 | 30.00 | 10:01 | 25.0 | 25.0 | |
| 8:11 | 29.10 | 29.64 | 29.64 | 8:11 | 30.45 | 28.92 | 28.92 | 9:11 | 29.64 | 30.00 | 30.00 | 10:02 | 25.0 | 25.0 | |
| 8:12 | 29.01 | 29.82 | 29.82 | 8:12 | 30.27 | 29.10 | 29.10 | 9:12 | 29.55 | 29.91 | 29.91 | 10:03 | 25.0 | 25.0 | |
| 8:13 | 28.92 | 29.91 | 29.91 | 8:13 | 30.27 | 29.10 | 29.10 | 9:13 | 29.55 | 30.00 | 30.00 | 10:04 | 25.0 | 25.0 | |
| 8:14 | 29.01 | 30.00 | 30.00 | 8:14 | 30.09 | 29.19 | 29.19 | 9:14 | 29.37 | 29.91 | 29.91 | 10:05 | 25.0 | 25.0 | |
| 8:15 | 29.10 | 29.91 | 29.91 | 8:15 | 30.09 | 29.37 | 29.37 | 9:15 | 29.28 | 29.82 | 29.82 | 10:06 | 25.0 | 25.0 | |
| 8:16 | 29.37 | 30.00 | 30.00 | 8:16 | 30.18 | 29.37 | 29.37 | 9:16 | 29.28 | 29.82 | 29.82 | 10:07 | 25.0 | 25.0 | |
| 8:17 | 29.37 | 29.91 | 29.91 | 8:17 | 29.91 | 29.55 | 29.55 | 9:17 | 29.10 | 29.82 | 29.82 | 10:08 | 25.0 | 25.0 | |
| 8:18 | 29.37 | 29.91 | 29.91 | 8:18 | 29.82 | 29.64 | 29.64 | 9:18 | 29.10 | 29.73 | 29.73 | 10:09 | 25.0 | 25.0 | |
| 8:19 | 29.46 | 29.82 | 29.82 | 8:19 | 29.73 | 29.73 | 29.73 | 9:19 | 29.19 | 29.64 | 29.64 | | | | |